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INSTITUTE OF
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# Economic Trends in the San Francisco Bay Area

By
Orville F. Poland

1963

*The Institute of Governmental Studies is pleased to present this monograph by Orville F. Poland as part of its series of Franklin K. Lane papers on the problems and future of the San Francisco Bay Area. Our intent in commissioning the Lane papers is to focus the varied competencies of the University on local and regional problems here in the Bay Area, and to do it within the scope of a single series of monographs. Each author speaks for himself in expressing viewpoints and opinions, raising questions, posing issues, presenting facts, and speculating on what the future holds. Thus the papers will, we hope, contribute significantly to the continuing discussion of Bay Area problems and the search for solutions.*

*The series takes its name from Franklin Knight Lane (1864–1921), a distinguished Californian who was successively New York correspondent for the* San Francisco Chronicle, *City and County Attorney of San Francisco, member and later Chairman of the U. S. Interstate Commerce Commission, and Secretary of the Interior in the Cabinet of President Woodrow Wilson.*

*Shortly after Franklin K. Lane's death, a group of friends arranged for the establishment of a fund to be held and invested by Herbert Hoover, Adolph C. Miller and Franklin D. Roosevelt for the benefit of Mr. Lane's widow during her lifetime, and thereafter for some purpose to perpetuate his memory. In 1939, the three trustees acted to establish the Franklin K. Lane Memorial Foundation at the University of California, Berkeley. The general purposes of the foundation are to promote "better understanding of the nature and working of the American system of democratic government, particularly in its political, economic and social aspects," and the "study and development of the most suitable methods for its improvement in the light of experience."*

*In 1958, when the incumbent Chancellor, Clark Kerr, now President of the University, moved to allocate income from the fund to the Bureau of Public Administration (now Institute of Governmental Studies), it was agreed that the initial effort should concentrate on studies of Bay Area problems. The current series of monographs is presented in partial fulfillment of this commitment.*

*I express my gratitude to Orville F. Poland and the many other contributors to the Lane series, most but not all of whom are colleagues here on the Berkeley campus. Finally, I would like to thank Stanley Scott, Assistant Director, who originated and administered the project, and is serving as editor of the monographs.*

DWIGHT WALDO
*Director*

# Economic Trends in the San Francisco Bay Area

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INSTITUTE OF GOVERNMENTAL STUDIES
University of California • Berkeley, California
DWIGHT WALDO, Director

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# Introduction

In the decade from 1950 to 1960 population in the Bay Area increased by somewhat more than the average for all metropolitan areas in the United States.[1] Bay Area population was up by 35 percent, while 212 metropolitan areas throughout the United States increased only 26 percent. However, growth in the Bay Area was very unevenly divided between its two standard metropolitan statistical areas.[2] The San Jose metropolitan area, in which defense industries located and expanded, grew by 121 percent. The remainder of the Bay Area—the San Francisco–Oakland standard metropolitan statistical area—received little additional defense business. Its population increase was only 24 percent, less than the national average for metropolitan areas, and about the same as that found in the Baltimore, Detroit, and Louisville metropolitan areas. Thus, the defense industries were the dominant factor in the Bay Area's growth during the 1950's.

This paper is concerned with the economic changes in the Bay Area, both in the 1950's and as anticipated during the next decade. It is hoped that examination of economic trends in the recent past and existing economic projections will provide some insight for policy considerations. Particular attention is given to growth of employment by type of economic activity and to geographic decentralization of major functions. Probable economic developments are discussed in terms of the impact they may have on public policy in the coming decade. No new attempt is made to project economic trends, although two existing projections are evaluated.

[1] The Bay Area is defined here as the San Francisco–Oakland and San Jose standard metropolitan statistical areas (SMSA's) combined. They include the following seven counties: Alameda, Contra Costa, Marin, San Francisco, San Mateo, Santa Clara, and Solano counties. Two of the traditional nine Bay Area counties—Sonoma and Napa—have been excluded from this analysis because data were not readily available. This exclusion does not, however, significantly alter the picture of the Bay Area's economy. Sonoma and Napa counties are included in the analysis of agriculture. The San Francisco–Oakland SMSA alone has been used as a unit of analysis in discussions of the role of central cities and in instances where comparable data are not available for both metropolitan areas.

[2] For convenience in this paper the shorter term "metropolitan area" will usually be employed in place of "standard metropolitan statistical area."

# Major Characteristics of the Bay Area Economy

Manufacturing provides 22.3 percent of the jobs in nonagricultural establishments in the Bay Area, and is the largest employer.[3] Nevertheless, manufacturing is far less important locally than it is in the nation as a whole, where 30.1 percent of nonagricultural employment is in manufacturing. Moreover, Bay Area manufacturing does not have as much of its employment in durable goods industries as the national average. Thus, the Bay Area has less "heavy" industry than many industrial centers in the East. The consequence is that the Bay Area does not have a strongly manufacturing, "industrial" tone. The population of the area contains more middle class and white collar workers and fewer laborers than the large manufacturing cities in the East and Midwest.[4]

The Bay Area has plants representing almost every manufacturing industry found in the United States. In ranking the diversification of 13 major manufacturing metropolitan areas, the U.S. Department of Commerce placed the San Francisco–Oakland third, after the Philadelphia and St. Louis metropolitan areas.[5] One hundred thirty-one of the 142 industries in the U.S. Census Bureau's three-digit classification are found in the San Francisco–Oakland metropolitan area. Only four metropolitan areas have more.

The major manufacturing groups in the Bay Area, measured by employment, are food products, transportation equipment, electrical machinery, fabricated metals, and printing and publishing. Nonelectrical machinery and chemicals also rank high when measured in terms of value added. The best developed manufacturing industries in the San Francisco–Oakland metropolitan area, that is, industries with highest employment compared with the national average, include several food industries, notably sugar, industries in the printing and publishing area, paperboard, chemicals, fabricated metals, ships and boats, and petroleum refining. The least developed industries are in the apparel, textiles, and rubber groups, and include motor vehicles and

[3] See Table 1 for distribution of employment among major industrial sectors in the Bay Area and the United States as a whole.

[4] Over half (52 percent) of the nonfarm workers in the Bay Area were white collar—if we consider white collar as including the census classifications of professional workers, managers, clerical and sales worker. In all urban areas of the United States the percentage was only 46 percent.

[5] U.S. Department of Commerce, *Future Development of the San Francisco Bay Area, 1960–2020,* Appendix C, Manufacturing Diversification Index, p. C-1 to C-3.

aircraft. A few industries do not appear at all; among these are some industries in the tobacco, coke, rubber, and railroad equipment groups.

Much of the early development of the Bay Area can be attributed to its geography, which led to the choice of the Bay region as a shipping and transportation center. It is now a major port for shipping to the Orient and other Pacific points, as well as being a focus for trade moving from central and northern California. Most of the military and naval

TABLE 1

NONAGRICULTURAL EMPLOYMENT IN THE SAN FRANCISCO BAY AREA AND THE UNITED STATES, BY INDUSTRIAL SECTOR, 1961

| Sector | Bay Area (thousands) | Percent of Bay Area Total | Percent of U. S. total |
|---|---|---|---|
| Manufacturing | 270.9 | 22.3 | 30.1 |
| Nondurable | 121.0 | 10.0 | 13.4 |
| Durable | 149.9 | 12.3 | 16.7 |
| Trade | 255.4 | 21.0 | 21.0 |
| Wholesale | 80.7 | 6.6 | 5.6 |
| Retail | 174.7 | 14.4 | 15.4 |
| Government | 236.6 | 19.5 | 16.3 |
| Services | 181.0 | 15.0 | 13.9 |
| Transportation, communication and public utilities | 113.2 | 9.3 | 7.3 |
| Finance, insurance and real estate | 78.4 | 6.5 | 5.1 |
| Construction | 76.8 | 6.3 | 5.1 |
| Mining | 1.8 | 0.1 | 1.2 |
| Total | 1,214.1 | 100.0 | 100.0 |

SOURCE: U. S. data are based upon U. S. Bureau of Labor Statistics data in *Survey of Current Business*, May 1962. Bay Area data have been compiled from California Department of Industrial Relations materials.

installations in the Bay Area have been located here because of the harbor and other shipping facilities. These activities include navy yards, shipbuilding and repair facilities, and depots for shipment of men and supplies overseas.

More important to the local economy today than its transportation functions is the role the Bay Area plays as an administrative center for regional offices and for distribution. San Francisco is a financial and banking center for the West, and houses regional offices for government agencies and national business firms. Business services and a large printing and publishing industry have been developed to support these activities. Because of the distributive function, San Francisco has also developed a large wholesale trade.

Second to manufacturing, trade is the largest activity in the Bay Area. It accounts for 21.1 percent of nonagricultural employment. Because of the Bay Area's role as a regional center for northern California, wholesale trade is relatively more important than in the rest of the country. The third largest employer is government, which accounts for 19.5 percent of nonagricultural civilian employment. One third of the public employees are federal; the remainder are state and local government workers, predominantly school teachers. (Additional personnel are in the armed forces at local military installations.) The service industries, including such functions as hotels, amusements, repair shops and personal services, account for 15.0 percent of nonagricultural employment. Finance, insurance, and real estate; transportation and communications; and construction follow in importance.

In every category but manufacturing, trade and mining, the Bay Area has a larger proportion than is found in the United States as a whole. Mining is insignificant in the Bay Area, providing employment for only 2,000 persons. There is considerable agricultural employment within the borders of the Bay Area. Approximately 32,400 persons, or 2.5 percent of total employment, worked in agriculture in the Bay Area (excluding Napa and Sonoma counties) in 1961.

The local economy, being diverse, is not heavily dependent upon one or two major industries. Thus, the area is not highly vulnerable to the vagaries of the market as are cities like Detroit, which is dependent upon automobile sales, or Seattle, which relies upon aircraft and defense orders.

The Bay Area has a relatively high degree of self-sufficiency. It generates a great deal of the demand for local employment. The U.S. Department of Commerce estimated that approximately 60 percent of Bay Area employment is in activities serving the local market and only 40 per cent outside markets.[6]

[6] See U.S. Department of Commerce, *Future Development of the San Francisco Bay Area, 1960–2020,* Washington, D.C., December 1959, p. 37. See also James Gillies, "Some Economic Implications of Metropolitan Growth in California," *in* California, Governor's Commission on Metropolitan Area Problems, *Metropolitan California,* 1961, p. 9–14.

# Economic Trends, 1949–1961

During the decade of the fifties, the Bay Area as a whole experienced moderate growth, which slowed after 1957. There were no drastic changes in the basic characteristics of the economy. Manufacturing, finance, services, and government increased their percentages of total employment; trade, transportation, communications, and public utilities declined relatively. Except for manufacturing, these developments were consistent with national trends. In the United States as a whole during the 1950's, employment in manufacturing declined relative to total employment, and it had no absolute growth. In California and the Bay Area, where manufacturing is relatively less developed, its role is still increasing.

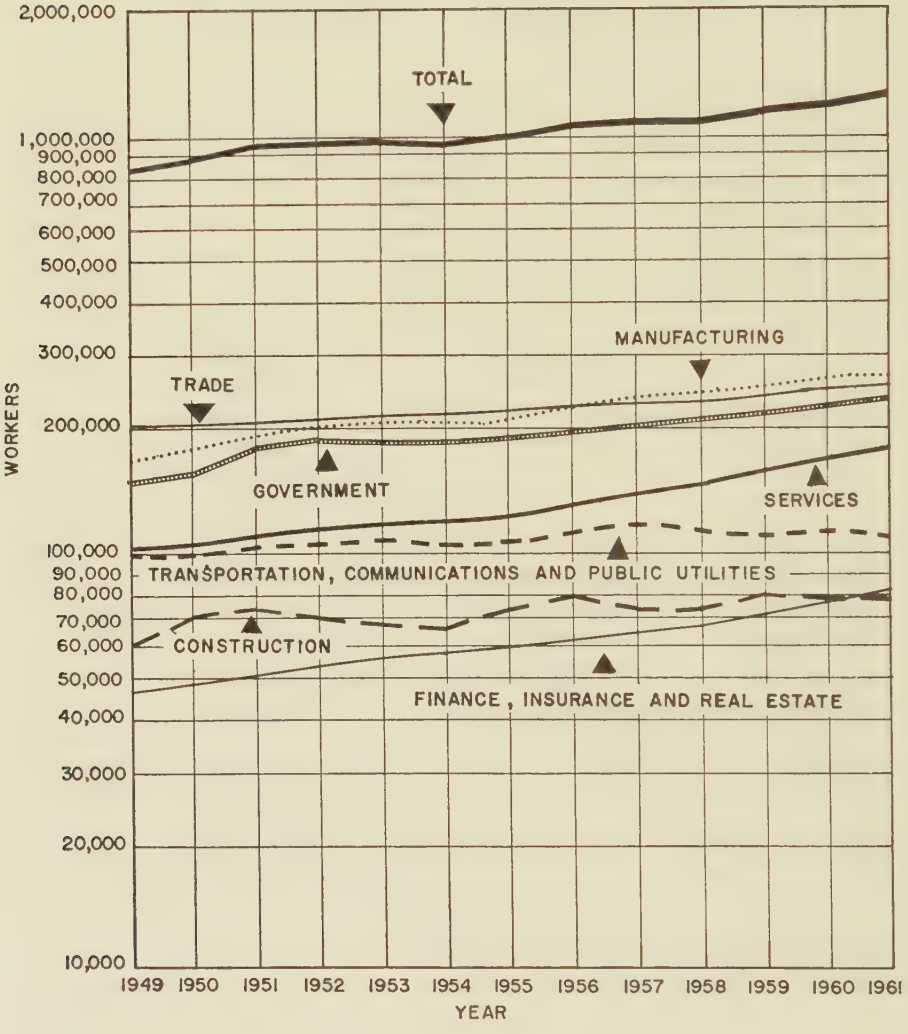
Chart 1 shows trends in employment for each major economic sector in the Bay Area since 1949. The chart has been drawn on a logarithmic scale so that rates of growth may be easily compared. In 1956 manufacturing passed trade to become the largest employer in the Bay Area. More significant, however, has been the sustained and rapid growth of government; of services; and of finance, insurance and real estate. The transportation, communications, and public utilities group as a whole had no significant growth. Construction, while trending gradually upward, has been noticeably affected by business cycles.

The most significant economic development during the 1950's was the rapid rise of the electronics industry and other industries related to the new defense and space programs. This change, which is not readily apparent in Chart 1, began in 1954 with the movement of Lockheed Aircraft Corporation into the Palo Alto area. Growth of these industries has continued at an almost constant rate since, and has been located largely in Santa Clara County. Its importance for the Bay Area can be seen in the fact that the increase in manufacturing employment in Santa Clara County, almost all of which was directly or indirectly related to defense work, was responsible for almost four fifths of the net increase in manufacturing employment for the entire Bay Area between 1954 and 1961.

Although the over-all Bay Area economy has grown in the past decade, some industries have declined. Employment declined during the 1950's in shipbuilding, coastwise shipping, railroads, and the military establishments, especially the naval shipyards. The Benicia Arsenal, Moore Drydock Company's shipyards, the Atlas Powder Works, Pan America's maintenance shops, Mare Island Naval Shipyard are some of the installations which curtailed employment substantially during

CHART I.

WAGE AND SALARY WORKERS IN NONAGRICULTURAL ESTABLISHMENTS IN SAN FRANCISCO-OAKLAND AND SAN JOSE SMSA'S COMBINED, 1949 TO 1961




SOURCE: CALIFORNIA DEPARTMENT OF INDUSTRIAL RELATIONS

the past decade. Employment in manufacturing declined in several cities between 1954 and 1958. Richmond, for instance, had 14 percent fewer workers in manufacturing in 1958 than in 1954. The vitality and versatility of the Bay Area economy has enabled these changes to be accommodated with relative ease.

Agricultural employment (not including Napa and Sonoma counties) rose from 32,500 in 1949 to 40,900 in 1955 but then declined to 32,400. In some parts of the area there was a dramatic transfer of land from agricultural to urban uses.[7] In both Santa Clara and Contra Costa counties the acreage in farms fell by more than 10 percent in the five years from 1954 to 1959. Despite these losses, the amount of land in farms remained nearly constant for the entire Bay Area during the 1950's. Declines of agricultural acreage in the urbanizing areas were offset by acreage increases in outlying sections, particularly Solano County. Thus, from 1950 to 1959 the Bay Area's total acreage in farms dropped only 4 percent.

A closer look at the shift in agriculture shows that the number of farms with orchards in the Bay Area declined by 21 percent from 1954 to 1959, and acreage in orchards declined 9 percent. Almost all the decline in acreage took place in Santa Clara County. After farms with orchards, poultry farms are the most numerous type in the Bay Area. In the five-year period to 1959 the number of farms with chickens declined by one half, but the number of chickens remained unchanged. This development is part of a major reorganization of the poultry business taking place throughout the country.

Farms with livestock are also significant in Bay Area agriculture. Although the number of farms with cattle and calves declined by one third from 1954 to 1959, the number of cattle and calves dropped by only 5 percent. The number of farms raising vegetables for sale was 23 percent lower, but acreage increased by 9 percent, largely as a result of new land put under cultivation in Alameda and Solano counties.

These data show that Bay Area agriculture, like agriculture elsewhere, is undergoing rapid changes. Small producers of some commodities are leaving agriculture fast. In addition, fruit and nut farms are being converted to residential and other urban uses. But agriculture is not disappearing from the Bay Area counties.

Unemployment was very high in 1949, a recession year. In that year about 9 percent of the civilian labor force in the Bay Area was unemployed. By 1951 the unemployment rate was 4 percent and has remained

[7] In the following analysis of agriculture, Sonoma and Napa counties are included with the other seven counties of the Bay Area.

between 4 and 6 percent annually since. The trend in the unemployment rate has been slightly upward since 1951, and in terms of numbers of unemployed the trend has been distinctly upward from 47,000 in 1951 to 89,000 in 1961, but it is still below the 1949 figure. In the early 1950's the San Jose metropolitan area had a higher percentage of unemployed than the rest of the Bay Area. As agriculture declined in importance, however, the San Jose area's unemployment rate became increasingly like that of the rest of the area.

The Bay Area's over-all unemployment rate has not varied as greatly as it has in many areas. Since the Korean War this area has had some resistance to downturns in the business cycle. This is partially attributable to the fact that recessions have hit manufacturing, mining, transportation, and construction hardest, and that manufacturing and mining, in particular, are relatively less important in the Bay Area than in the United States as a whole.

In California, growth in employment has been distinctly slower since 1957 than it was from 1950 to 1957. The statewide slowdown is largely accounted for by declining rates of growth in southern California, especially in the aircraft industry. On the other hand, the most significant characteristic of employment in the Bay Area since 1957 has been the persistence of prior trends. Only the transportation, communications, and public utilities sector, and construction have shown any distinctive change in trend. In both of these sectors previous modest growth has ceased and neither sector has had any growth since 1957.

Bay Area trends differ only slightly from national ones. While manufacturing employment in the Bay Area has been rising during the past four years, in the nation as a whole there has been no growth in this sector. Employment in the services and trade has had less vigorous growth nationally than locally.

# The San Jose Metropolitan Area Compared With the Remainder of the Bay Area

Developments in the San Jose metropolitan area have been at sharp variance with those in the rest of the Bay Area. The most obvious contrasts are in the greater relative importance of manufacturing in the San Jose metropolitan area, and the rapid over-all growth of that metropolitan area. This growth accelerated in 1954 and has continued at a high rate since. Increases in employment by defense-oriented manufacturing firms have been most important and have brought a rise in population. Almost all sectors of the economy have shared in the added economic activity. The magnitude of the change in manufacturing is illustrated by the fact that such employment in Santa Clara County (coextensive with the San Jose metropolitan statistical area) rose from 28,000 employees in 1954 to 75,000 in 1961. The county's share of Bay Area manufacturing jumped from 13 percent in 1954 to 28 percent in 1961. (Chart 2 compares the rates of growth of employment in the San Jose and San Francisco–Oakland metropolitan areas from 1949 to 1961.) Since 1954, the increase in all sectors except agriculture has been significant, if not sharp, in the San Jose metropolitan area. Because of the area's growth, construction plays a more important role than it does nationally. The transportation, communications, and public utilities sector has had less rapid growth than other sectors. (Chart 3 shows trends in employment by sector in the San Jose standard metropolitan statistical area.)

The growth in total employment in the San Jose metropolitan area has been consistent from year to year since 1954. Business cycles and national changes in military demand have not substantially altered the rate of growth in any sector. In 1958 the service sector passed government as an employer. The construction industry has not increased its employment since 1959.

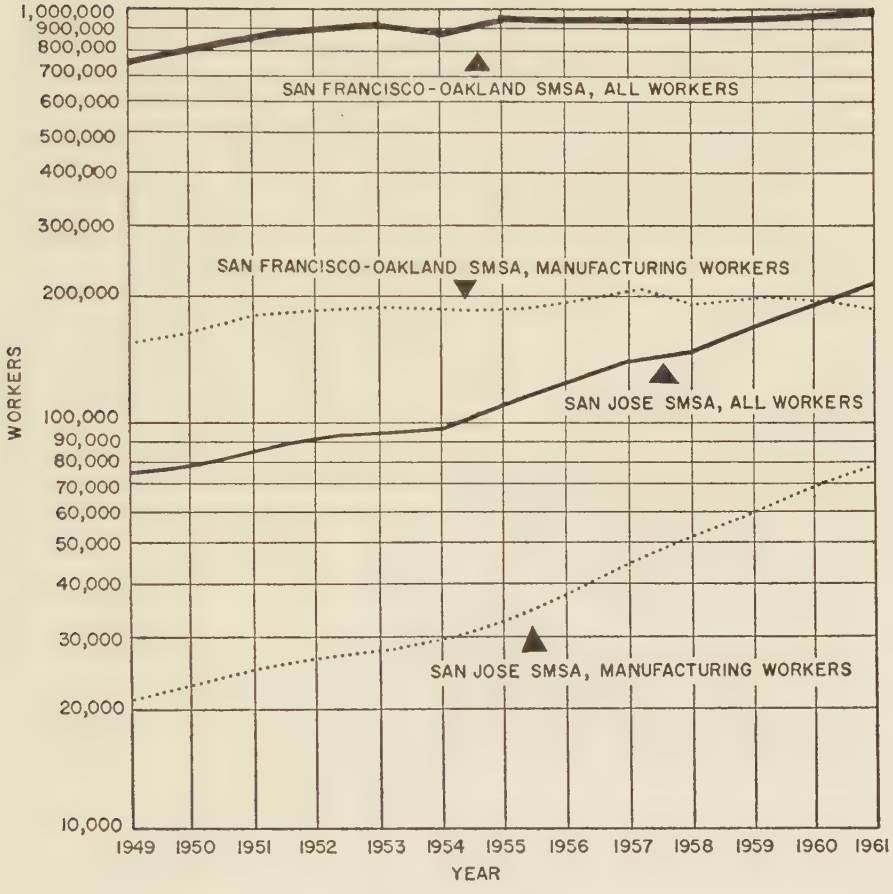
Three quarters of the manufacturing employment in the San Jose metropolitan area is in durable goods industries, largely in missile and electronics firms. Food processing, which was the largest manufacturing employer in 1949, has had no gain since then, and has been passed by electrical machinery. The growth of the San Jose area in the 1950's was almost entirely a consequence of the introduction of defense-oriented industries into the county.

# The San Francisco–Oakland Metropolitan Area

By comparison with the San Jose metropolitan area, the San Francisco–Oakland metropolitan area has diversity of employment, and stability, but only modest growth. Its population increase approximated the national average for large metropolitan areas during the 1950's. Growth has been pronounced and persistent in the services; in government; and in finance, insurance, and real estate. Manufacturing; construction; and transportation, communications, and public utilities, on the other hand, have experienced no significant rise since the end of the Korean War. These trends are consistent with those of the nation at large.

Individual industry groups within manufacturing have shown relative stability in the San Francisco–Oakland metropolitan area. Food processing, still the largest manufacturing industry, has been stable. Electrical machinery has had sharp increases in employment, but has become moderately stable since 1957. Fabricated metals, and printing and publishing, second and third largest manufacturing industries, have had modest growth in employment. Transportation equipment has declined since 1953, largely because of reduced activity in ship and boat building. Chemicals, and stone, clay, and glass products industries, although major industry groups, have experienced either small gains or stability in employment.

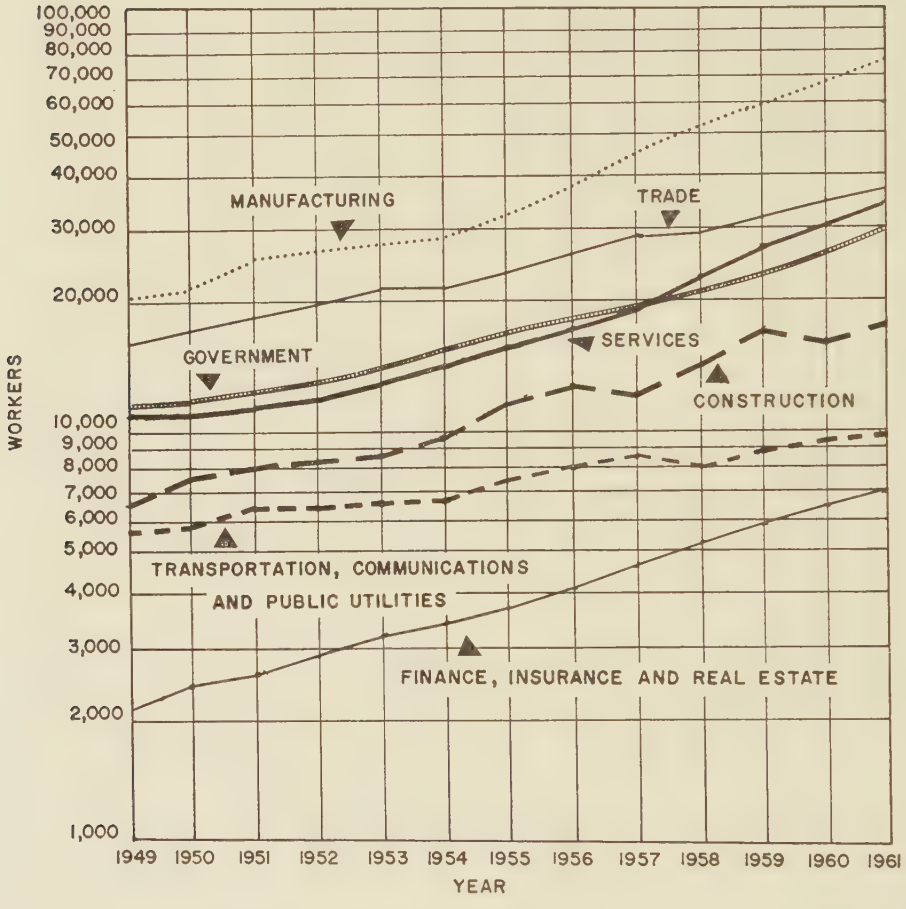
CHART 2. WAGE AND SALARY WORKERS IN NONAGRICULTURAL ESTABLISHMENTS IN SAN FRANCISCO-OAKLAND AND SAN JOSE SMSA'S, 1949 TO 1961.




SOURCE: CALIFORNIA DEPARTMENT OF INDUSTRIAL RELATIONS

CHART 3.

WAGE AND SALARY WORKERS
IN NONAGRICULTURAL ESTABLISHMENTS IN
SAN JOSE SMSA, BY INDUSTRY, 1949 TO 1961




SOURCE: CALIFORNIA DEPARTMENT OF INDUSTRIAL RELATIONS

# Economic Concentration in San Francisco and Oakland

Two notable locational developments have been taking place in the Bay Area economy. The first is the rapid growth in Santa Clara County, discussed above. The second development is the gradual but continuing increase in the relative importance of the outlying areas as opposed to the central cities in the San Francisco–Oakland metropolitan area. The primary factor in this development has been rapid growth in the outlying areas, but in some respects growth of San Francisco and Oakland has been slow. San Francisco and Oakland have both had absolute declines in population since 1950.

The greatest concentration of economic functions in the central cities (San Francisco and Oakland) is found in wholesale trade. Services follow wholesale trade in this regard. Retail trade is less concentrated, with about half of its total receipts found in San Francisco and Oakland. Slightly less than half of the manufacturing, measured by value added, is in San Francisco and Oakland. Table 2 shows the concentration of each function in the central cities and the trend over a 10-year period (11-year period for manufactures).

The proportion of each economic function in the central cities has been dropping in the postwar years. The decline has varied among the categories and generally has been greater in San Francisco than in

TABLE 2

CENTRAL CITY ECONOMIC ACTIVITY AS PROPORTION OF TOTAL FOR SAN FRANCISCO–OAKLAND STANDARD METROPOLITAN STATISTICAL AREA
1948 to 1958

| Type of activity[a] | San Francisco and Oakland as percentage of SMSA total | | |
|---|---|---|---|
| | 1948 | 1954 | 1958 |
| Wholesale trade[b] | 80.8 | 75.0 | 65.7 |
| Retail trade | 66.8 | 58.3 | 52.4 |
| Services | 76.3 | 75.8 | 69.9 |
| Manufacturing | 58.8[c] | 46.9 | 46.0 |
| Population | 53.5 | 46.3 | 41.8 |

[a] The following measures of activity were used: sales for wholesale and retail trade, receipts for services, value added for manufacturing. Data derived from U. S. Bureau of the Census, *Census of Business*, 1948, 1954, 1958, *Census of Manfactures*, 1947, 1954, 1958. Population estimated by interpolation of census data.

[b] For San Francisco only.

[c] For 1947.

Oakland.[9] Wholesale trade has had the greatest decline in its proportion of activity in the central cities; manufacturing the least.

## Wholesale Trade

Of the major economic activities, wholesale trade has the greatest concentration in the central cities of the San Francisco–Oakland metropolitan area. In 1958, wholesale trade sales in San Francisco and Oakland were 82 percent of all wholesale sales in the metropolitan area. The wholesale trade most concentrated in San Francisco was that in dry goods and apparel, furniture and home furnishings, farm products, groceries, and paper. Three quarters or more of the wholesale trade in each of these commodities was in San Francisco. By comparison only 25 percent of the sales of petroleum bulk storage stations, and 39 percent of the sales of motor vehicle and automotive equipment wholesalers were in San Francisco. (See Table 3.)

TABLE 3

San Francisco's Wholesale Trade Receipts as Proportion of Total for San Francisco–Oakland Standard Metropolitan Statistical Area, 1958, by Type of Trade

| Type of trade | Percentage of SMSA total |
|---|---|
| Dry goods and apparel | 80.4 |
| Furniture and home furnishings | 80.3 |
| Farm products—raw materials | 80.2 |
| Groceries and related products | 77.2 |
| Paper, paper products (except wall paper) | 74.6 |
| Beer, wine and distilled alcoholic beverages | 71.6 |
| Metals, minerals (except petroleum and scrap) | 71.0 |
| Machinery, equipment and supplies | 64.2 |
| Drugs, chemicals and allied products | 63.0 |
| Hardware, plumbing, heating equipment and supplies | 62.5 |
| Electrical goods | 60.0 |
| Lumber and construction materials | 59.2 |
| Tobacco and tobacco products | 53.3 |
| Scrap and waste materials | 46.4 |
| Motor vehicles, automotive equipment | 38.6 |
| Petroleum bulk stations and terminals | 24.7 |
| Total wholesale trade | 65.7 |

Source: U. S. Bureau of the Census, *1958 Census of Business*, vol. IV.

[9] San Francisco is a consolidated city–county.

The increase in wholesale trade has taken place entirely outside San Francisco. Consequently, San Francisco's share dropped from 81 percent in 1948 to 66 percent in 1958, although its sales, measured in constant dollars, were not changed much. San Francisco's preponderance in wholesale trade and the gradual growth in other counties is illustrated by Chart 4.

## Retail Trade

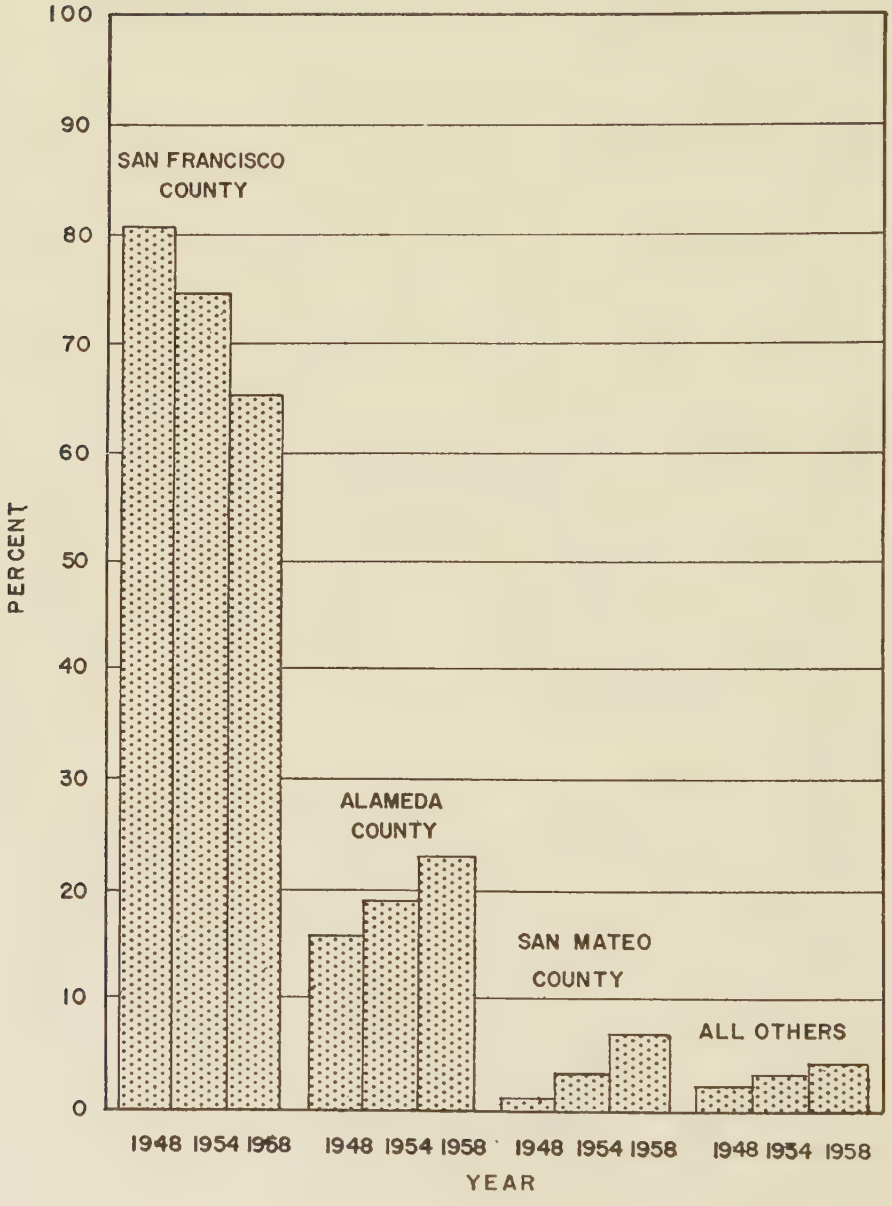
Retail trade is far less concentrated than wholesale. (See Table 4 and Chart 5 for details.) Much of the retail trade is dispersed on a basis of population. Nevertheless, San Francisco and Oakland had 52 percent of the retail trade in 1958, but only about 42 percent of the population. The outlying counties have been increasing their share of retail trade as their percentage of population has increased. There is considerable variation in concentration among types of retail stores. The greatest concentration in San Francisco is found among restaurants and bars, department stores, and clothing stores (over 40 percent of sales of each of these categories is found in San Francisco). Lumber and hardware retail stores are primarily found outside San Francisco. Food stores, automobile dealers and gasoline stations are generally located in accordance with population.

Retail sales in the central business districts show relative declines similar to those experienced in the central cities as a whole. In 1958, 19.6 percent of the metropolitan area's retail sales were in the central business districts of San Francisco, Oakland, and Berkeley. This was down from 21.5 percent in 1954.

## Services

Services tend to be highly concentrated in San Francisco and, to a much lesser extent, in Oakland. In 1958 over two thirds (69.9 percent) of the area's receipts from services were in San Francisco and Oakland. Three quarters of the business of hotels and motels was done in San Francisco. Two thirds of the receipts for business services and for the motion picture business was in San Francisco. Repair services (including auto repair), personal services, such as laundries and barber shops, and amusements other than motion pictures were less concentrated. These dispersed services followed, to an extent, the spread of population to the suburbs. The dominance of San Francisco (57 percent of total in 1958) in services has declined in recent years, but at a rate far slower than the decline in San Francisco's population. (See Table 5 and Chart 6 for concentration of services.)

CHART 4. LOCATION OF SALES IN WHOLESALE TRADE IN SAN FRANCISCO-OAKLAND SMSA BY COUNTY, 1948 TO 1958




SOURCE: U.S. CENSUS OF BUSINESS

## Office Location

The business office plays a major role in the economy of the central city. For cities like San Francisco, which have national or regional offices, this is particularly significant. In recent years, the appearance of head offices in several suburbs, such as Menlo Park, leads to speculation as to the existence and extent of a movement to the suburbs. Similar interest in the movement of offices to the suburbs has developed in the New York region.

TABLE 4

San Francisco's Retail Trade Receipts as Proportion of Total for San Francisco–Oakland Standard Metropolitan Statistical Area, 1958, by Type of Trade

| Type of outlet | Percentage of SMSA total |
|---|---|
| Eating and drinking places | 48.0 |
| Apparel, accessory stores | 47.8 |
| General merchandise stores | 46.4 |
| Furniture and home furnishings equipment stores | 38.2 |
| Drug stores, proprietary stores | 30.2 |
| Food stores | 29.6 |
| Non-store retailers | 28.7 |
| Automotive dealers | 26.5 |
| Gasoline service stations | 24.0 |
| Lumber, building materials, hardware, farm equipment dealers | 19.5 |
| Other retail stores | 40.6 |
| Total retail sales | 35.0 |

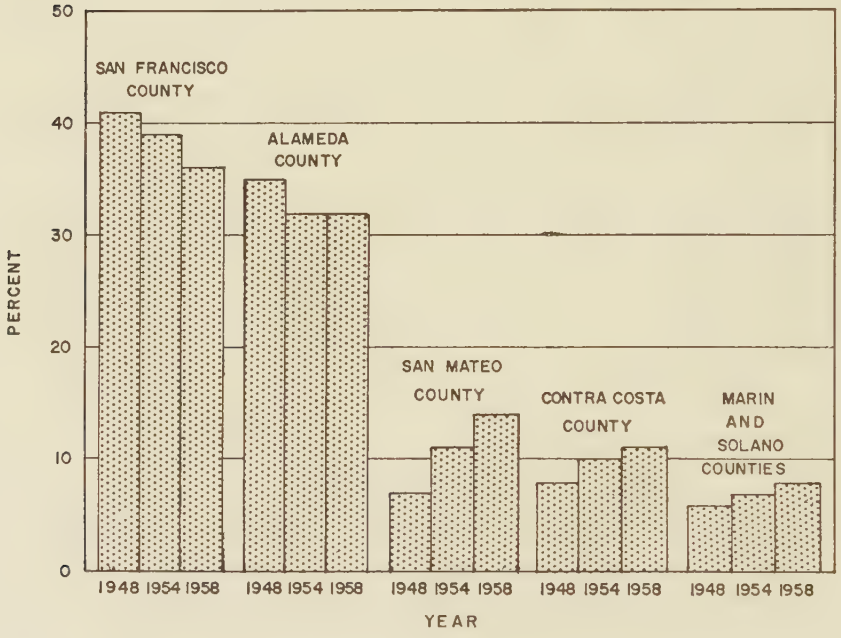
Source: U. S. Bureau of the Census, *1958 Census of Business*, vol. II.

Data on office location are not readily available. However, Donald L. Foley surveyed offices in the San Francisco Bay Area and concluded that there has been a decided increase in the number as well as the proportion of offices located in the distant suburban areas.[10] But he also found that in the period from 1928 to 1954, most of the offices being located in the suburbs were attached to manufacturing plants or some other non-office facility. Almost no important top office which was not attached to a factory or operating establishment moved to the suburbs. Thus, central cities appear to be retaining their position as centers for administrative offices.

[10] Donald L. Foley, *The Suburbanization of Administrative Offices in the San Francisco Bay Area*, Research Report No. 10, Bureau of Business and Economic Research, University of California, 1957.

Most executives feel the need for daily face-to-face communication, which is usually easiest to establish in the central cities. For a few operations this motivation is not great enough to hold the offices. Insurance offices, for example, have moved to outlying areas. Some firms in the newly developing electronics and missile industries are locating their offices on the Peninsula. Many of these firms have more frequent contact with other defense firms and government agencies outside the metropolitan area than with the business community in San Francisco. These business relations suggest that the geographic situation of the San Francisco Airport may be a significant factor in the location of the offices.

CHART 5. LOCATION OF RETAIL SALES IN SAN FRANCISCO-OAKLAND SMSA BY COUNTY, 1948 TO 1958.




SOURCE: U.S. CENSUS OF BUSINESS

Experience with office locations in the Bay Area appears to be similar to that in the New York metropolitan area. While there has been some movement outward from the center of New York, it has not affected the dominance of Manhattan for office location.[11] In both the Bay Area

[11] See Raymond Vernon, *The Changing Economic Function of the Central City*, New York, 1959, p. 88ff. A survey by the *New York Times* published on September 5 and 6, 1961, indicates no change in trends since Vernon's study.

and the New York region the movement of offices to the suburbs has been an economic event of some significance for the suburb but not for the central city.

## Manufacturing

Of the major types of economic activity, manufacturing shows the least concentration in the central cities. In 1958, 46 percent of manufacturing, measured by value added, was located in San Francisco and

TABLE 5

San Francisco's Service Receipts as Proportion of Total for San Francisco–Oakland Standard Metropolitan Statistical Area, 1958, by Type of Service

| Type of service | Percentage of SMSA total |
|---|---|
| Hotels, motels, tourist courts, camps | 75.4 |
| Motion pictures | 68.1 |
| Miscellaneous business services | 68.0 |
| Auto repair, auto services, garages | 47.8 |
| Miscellaneous repair service | 43.0 |
| Personal services | 41.4 |
| Amusement, recreation services, except motion pictures | 38.8 |
| Total selected services | 57.0 |

Source: U. S. Bureau of the Census, *1958 Census of Business*, vol. VI.

Oakland.[12] San Francisco, however, has less manufacturing than does Alameda County. The allocation of manufacturing among the counties of the metropolitan area in 1958 was as follows:

| | *Percent* |
|---|---|
| Alameda County | 39 |
| San Francisco County | 28 |
| Contra Costa County | 19 |
| San Mateo County | 12 |
| Other counties | 2 |
| Total | 100 |

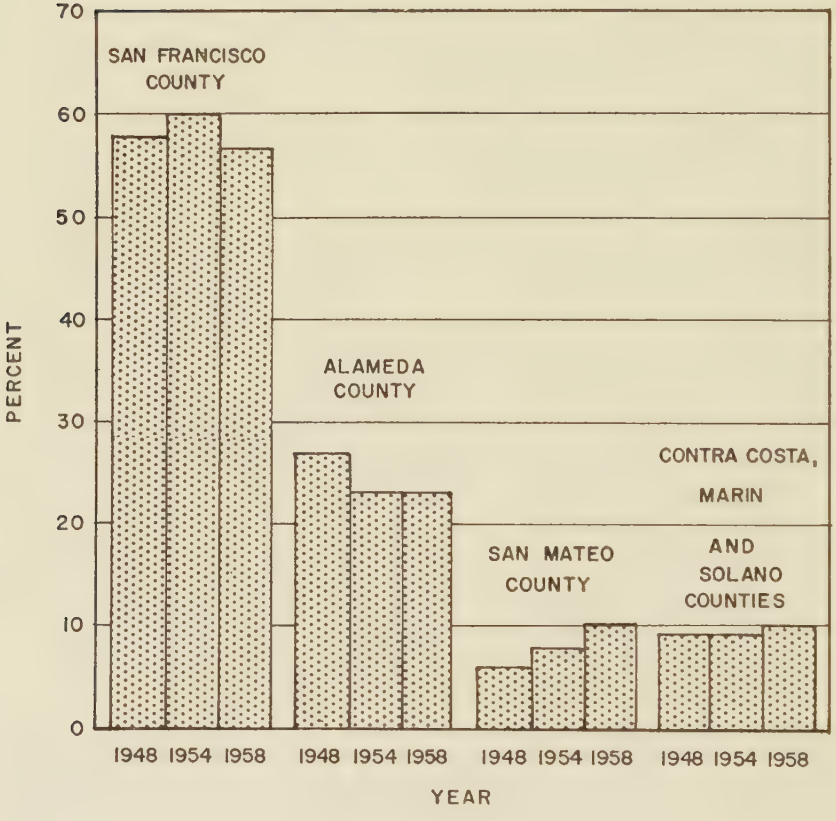
The manufacturing industries with the greatest concentration in San Francisco are apparel with 86 percent of its activity in San Francisco, printing and publishing (66 percent), furniture (55 percent), and food products (38 percent). On the other hand, the Bay Area's fairly sizable

[12] When measured by employees a slightly higher percentage was located in these two cities. This difference is explained largely by the location in Richmond, outside the central cities, of the oil refineries which have large value added and few employees.

production of petroleum products, chemicals and primary metals is almost entirely outside San Francisco.

While San Francisco increased its manufacturing on a constant dollar basis during each census interval since 1947, the city's proportion of the metropolitan area's total declined, especially from 1947 to 1954. During the first interval, from 1947 to 1954, there was rapid expansion in the East Bay, notably in Richmond and San Leandro. In the second

CHART 6. **LOCATION OF SERVICE RECEIPTS IN SAN FRANCISCO-OAKLAND SMSA BY COUNTY, 1948 TO 1958.**




SOURCE: U.S. CENSUS OF BUSINESS

period, growth shifted to other municipalities. In the San Francisco–Oakland area the greatest relative increase was in San Mateo County. Alameda County retained a constant share of manufacturing during both periods. The greatest Bay Area growth in this period took place in the San Jose metropolitan area, especially Sunnyvale. (See Table 6 and Chart 7 for location of manufacturing in the San Francisco–Oakland metropolitan area.)

TABLE 6

San Francisco's Manufacturing as Proportion of Total for San Francisco–Oakland Standard Metropolitan Statistical Area, 1958, by Industry Group
(Measured by value added)

| Industry group | Percentage of SMSA total |
|---|---|
| Apparel and related products | 85.7 |
| Printing and publishing | 65.9 |
| Furniture and fixtures | 54.1 |
| Food and kindred products | 37.7 |
| Fabricated metal products | 29.5 |
| Transportation equipment | 26.3 |
| Miscellaneous manufactures | 23.5 |
| Machinery (except electrical) | 23.1 |
| Electrical machinery | 15.0 |
| Stone, clay and glass products | 13.0 |
| Pulp, paper and products | 11.9 |
| Chemicals and allied products | 9.2 |
| Primary metal industries | 4.6 |
| Total Manufactures | 27.8 |

Source: U. S. Bureau of the Census, *1958 Census of Manfactures*, vol. III.

## Economic Functions of Central Cities

This statistical analysis of the relation of the central cities to the San Francisco–Oakland metropolitan area suggests some of the economic functions of these cities.[13]

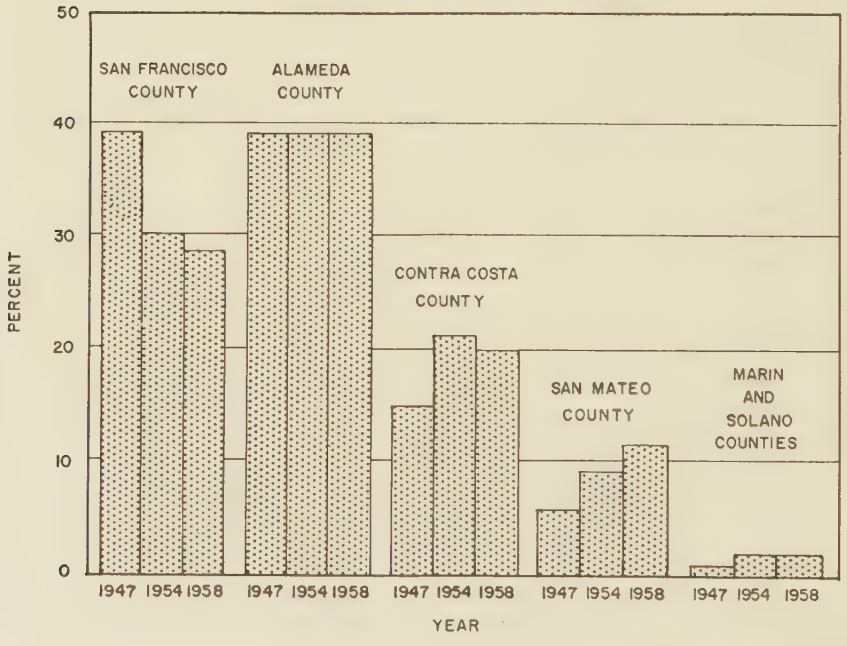
San Francisco is a major center for business offices. In addition to regional and headquarters offices, many business services, such as attorneys' offices and banking firms are located in the city. And to provide for these functions, there are printing and publishing establishments, hotels, eating and drinking places, and related entertainment.

[13] See Raymond Vernon, *op. cit.*, for comparison with New York City and other central cities.

Much of the manufacturing located in San Francisco finds personal communication important. Traditionally the apparel industry has been oriented in this way. Printing and publishing needs fast access to its customers. These firms are concentrated in San Francisco, with additional plants located in the nearby East Bay. Wholesale trade, especially in a few fields like home furnishings, is highly concentrated in San Francisco.

Some activities, however, have a distinct tendency to locate outside San Francisco. The relatively unaesthetic industries of oil refining, some chemical plants, and scrap metal yards, for example, are located outside. Much of the retail trade activity, especially that of food stores, is spread throughout the metropolitan area, along with the population. Similarly, most facilities providing personal services are located near the populations they serve. Large department stores and clothing stores have long been centered in San Francisco and Oakland. With the growing use of the automobile these stores have been decentralizing, although central

CHART 7. LOCATION OF MANUFACTURING IN SAN FRANCISCO-OAKLAND SMSA BY COUNTY, 1947 TO 1958 (MEASURED BY DOLLAR VALUE ADDED)




SOURCE: U.S. CENSUS OF MANUFACTURES

cities still hold a considerable amount of this trade. The business activity associated with the automobile tends to be decentralized. This is true of the bulk oil storage station, gasoline service stations, automobile repair, and even auto wholesalers.

The distinctive characteristics of the suburbs have encouraged some new industrial development outside San Francisco and Oakland. The location of the growing electronics industry in the Palo Alto area is at least partially explained by the fact that the suburban middle class environment of the Peninsula is attractive for the engineers and scientific personnel who must staff the electronics firms.

There is evidence that San Francisco will continue to have a substantial economic base for the future. Nevertheless, it has experienced some relative decline in most economic functions, and a fairly substantial erosion of its relative position in others. These declines raise the question of whether San Francisco may anticipate by 1980 some of the economic decay presently found in older cities of the East. Already there has been an absolute decline in population in San Francisco, Oakland, and Berkeley. Will absolute declines in economic activity follow, as has occurred elsewhere?

Oakland's position is somewhat different from San Francisco's. Oakland's base is more heavily in manufacturing and less in services than San Francisco's. Paul Wendt, in his study of the San Francisco–Oakland central business districts, found that land values were declining in Oakland's central business district, but rising in San Francisco's.[14] Apparently San Francisco's prominence for financial administration, for prestige shopping and entertainment will make it possible for the city to retain its commercial activities. Oakland, on the other hand, may face more serious competition with outlying areas.

[14] Paul F. Wendt, *The Dynamics of Central City Land Values—San Francisco and Oakland, 1950–1960*. Research Report 18, Real Estate Research Program, Institute of Business and Economic Research, University of California, Berkeley, 1961.

## Future Trends

Various economic analyses of California indicate that the state may expect a lower rate of growth in employment during the next decade than was experienced in the 1950's. It is not clear whether this will mean a lower rate of immigration to California. Population may continue to increase and jobs become harder to find. If this should happen, the state will be faced with serious problems of economic development. California, like many older Eastern states, would then have to stimulate new employment opportunities.

There will be differences in the rates of growth in the various regions of California. The San Francisco Bay Area should expect to fare better than most of the others and have a relatively high rate of growth. Even this rate of increase probably will lag behind that experienced in the period 1950–1957, although in absolute numbers growth in the 1960's probably will equal that of the 1950's. A U.S. Department of Commerce report expects an increase in employment in the Bay Area of 463,000 from 1957 to 1970, an annual rate of increase of about 2.3 percent.[15] Stanford Research Institute in its study foresees approximately the same rate of increase.[16] To put this in perspective, the annual rate of increase from 1950 to 1957 was about 2.8 percent;[17] from 1957 to 1961, 2.7 percent.[18]

In most respects the basic characteristics of the economy of the Bay Area will remain unchanged in the coming decade. However, the continued expansion of electronics and other industries related to the space and defense programs will increase their importance in the local economy. These industries will be dependent upon political decisions relating to government spending on defense, space, and research programs. (This, of course, was also true of the shipbuilding and repair programs of the past.) It is not likely that the present defense and space industries will decline in the foreseeable future. Even if there should be an effective arms control program, there will continue to be heavy government demand for electronic equipment to police the arms control and for space exploration. One should not overlook the possibility that shifts in military and government demand may cause contract cancellations with temporarily severe dislocations in specific localities. The defense

[15] U.S. Department of Commerce, *Future Development of the San Francisco Bay Area, 1960–2020.*

[16] Stanford Research Institute, *The California Economy, 1947–1980;* by Robert K. Arnold and associates, Menlo Park, December 1960.

[17] U.S. Department of Commerce data, *op. cit.*

[18] Nonagricultural employment only.

industry is fast changing, with rapid obsolescence and occasionally large layoffs of personnel.

The impact of the defense-oriented industries has been largely in Santa Clara County and southern San Mateo County. This geographic concentration is expected to continue in the southern part of the Bay Area. Because these industries account for a large part of the growth of the Bay Area, it is expected that most of the growth in the next decade will be located in the southern portions. Some electronics plants undoubtedly will be located elsewhere.

The expectations of increased economic activity are not limited to defense industries. The U.S. Department of Commerce anticipates substantial increases in manufacturing in the Bay Area in the next 10 to 15 years. Some of the industries in which growth is probable include: refineries, petrochemical and other chemical industries, computer production, food products industries, the packaging and container industry, aluminum fabrication, printing and publishing, furniture, and industrial service and supply. In addition, it is considered possible that an integrated steel mill will be built in the Bay Area, with a related increase in metal working and other industries which would profit by the installation of such a mill. This adds up to a considerable growth in manufacturing activity in industries already well established in the Bay Area.

The U.S. Department of Commerce foresees other changes in activity. Wholesale trade is expected to increase, but to lose some of its dominant regional position to Los Angeles and cities of the Central Valley. Transportation can expect to decline relative to other sectors. Government activity should see continued rapid growth. This increase will be largely in functions of state and local government which will expand in order to provide services—especially education—for the growing population. Similarly, construction will be active in providing for new population and industry. Activity in finance, insurance, and real estate is expected to grow more than proportionally. On the other hand, the continued decline of agriculture is anticipated as population and industry preempt farm land in the southern part of the Bay Area.

In locational terms the Bay Area can expect continued decentralization from the central cities. However, the spread of population and economic functions will still leave substantial activity in San Francisco and Oakland. Most central and regional offices will be in these cities. Similarly, much of the service activity, wholesale trade, and tourist trade will remain with San Francisco and Oakland. Nevertheless, the bulk of the growth will occur in Santa Clara County and this will tend to move the economic and demographic center of gravity southward

from San Francisco. The northern part of the area can expect less of the region's growth. However, locally severe problems may be experienced because a small absolute increment may represent a large relative increase in population or industry for a small community. The gradual spread of suburbs northward can be expected to continue, and the coastal areas of Contra Costa County can anticipate further development of its heavy industry and other activities that are dependent upon port facilities.

All this indicates that the Bay Area can expect more of the same. The basic character of the area will not change greatly. Growth will continue, although probably at a lower rate than in the mid 50's. There will be severe local growth problems, however, especially in Santa Clara County. The economic environment faced by public policy makers will not be fundamentally different from the present one.

There are, however, clues to possible new developments and problems. In the first place, the growth of the electronics-defense industry brings with it possible difficulties as well as benefits. This new industry is peculiarly vulnerable to political decisions and subsequent arbitrary changes in demand. Moreover, it is characterized by very rapid obsolescence. Entrepreneurs must be skillful and alert lest they be by-passed in new product development. This new industry brings to the Bay Area the excitement of new ideas and products, but also introduces a new vulnerability.

Much of the analysis in this paper and elsewhere of the economy of the Bay Area has been in terms of the region and the state of California. However, future developments in the area may be even more influenced by national events than by state and local ones. Consequently, in looking to the future, it is important to consider national economic trends. In this regard, it has already been noted that the San Francisco–Oakland metropolitan area has experienced population growth in the 1950's remarkably near the average for metropolitan areas of its size.

Examination of the national economic scene indicates that automation and other economic developments are contributing to severe problems in employment. Manufacturing employment has never regained its 1953 peak, although production has climbed considerably. It has been suggested that automation, as it spreads to other sectors of the economy, will bring reductions in the demand for labor comparable to those in manufacturing. Already automation has had an impact in the telephone industry and is beginning to in the banking field. Mechanization and technological innovation in construction has substantially reduced labor requirements in this area. This suggests that limitations

on employment opportunity and consequent needs for retraining of displaced workers are likely to become a major problem in the Bay Area. Related to this is the probability that rapid technological change will lead to more plant closings in the area as the plant and equipment ages. It seems improbable that these shifts in resources will be as significant in this area in the next decade as they are already in some eastern cities, but they *will* be a factor.

Physical decay of the central cities is another development—now prominent in the older cities of the East—which may increasingly become a problem in this area. While the downtown business and entertainment districts of San Francisco and Oakland are expected to remain vital, a belt of blighted areas has appeared around the downtown sections.

# The Role of Projections and Their Significance for Public Policy

In a free enterprise economy most basic economic decisions are made by private firms. These decisions, if they are to be successful, must be in tune with natural laws of economic development. The public sector is not generally conceded a major role in economic decisions. This idea has been modified to some extent with regard to actions of the federal government which indirectly determine or influence economic events. At the state and local level, decision making is still very largely a private matter. State development agencies are generally not permitted or motivated toward extensively influencing economic decisions.

If the economic decisions in the community are to be made by private enterprise, of what value are economic projections to the public policy maker at the local level? There appear to be two roles which projections may play. In the first place, local governments may anticipate economic changes in order to prepare for them. Thus, if growth is expected, preparation may be made for provision of the services, schools, and transportation facilities which will be required. Problems can be anticipated before they appear. In a sense, this is a passive reaction to economic change, but it is the one in which local government plays its most significant role.

Secondly, economic projections may be useful in guiding public agencies so they may influence economic decisions. While economic decisions are usually made by the private sector, part of the environment within which they are made is public. This is to suggest that the picture presented earlier is overdrawn, and that public agencies need not be entirely impotent in this area.

This poses the question of what local governments may do to influence private economic decisions. Governmental action may have two aspects: first, that of the economic development of the region as a whole, and second, the allocation of this development geographically within the region.

The problem of influencing economic development in a region has usually been approached on a piecemeal basis. There is little explicit economic planning on the metropolitan area level. Although government on the regional level might have numerous opportunities to influence private economic decisions, the institutional arrangements for economic planning on the metropolitan area level are generally inadequate. New institutional devices must be invented to assist the localities

before this planning can be effective. The Association of Bay Area Governments, for example, may provide a basis for some future regional planning. Only time will tell what other institutional arrangements may be required.

There are, however, political obstacles to effective planning. In many metropolitan communities important groups stand to gain from the present lack of economic planning. Unplanned growth may become valuable in itself for many powerful interests. Agricultural landowners who expect to sell to developers at increased prices, as well as construction firms and local commercial enterprises, may benefit, at least in the short run, from uncontrolled growth. Thus, the problems of economic planning in the metropolitan area become entwined with problems of political and administrative institutions and with politics itself.

Economic trends in the Bay Area pose two different types of problems for policy makers. On one hand, are the problems of *growth* such as those found in the southern part of the area. On the other hand, are those problems associated with a relatively *stable* economy which must adjust to changes caused by movement to the suburbs and shifting demands for products and employment. Thus, like the United States as a whole, the Bay Area has problems of growth, of readjustment, and even of decline. Unlike many areas of the United States, however, the Bay Area's most pressing problems are those of growth. While these two types of problems supplement each other to some extent, unfortunately many of the workers who lose jobs because of technological change are not qualified to fill the new jobs being created. Public policies for the two kinds of problems, although interrelated, require different approaches.

Several devices are available to government authorities who undertake economic planning to direct economic activity into socially desirable channels before growth takes place. One device is land use planning through the familiar techniques of zoning and master plans. Present use of this device is severely limited by the fact that zoning is undertaken by the individual city and county governments, and thus does not cope adequately with economic problems that spread over entire metropolitan areas.

A second device which might be used is the taxing power. For many years taxation has been used by the federal government as an instrument of public policy. But on the local level there has been much less consideration of taxes as instruments of economic development. Local taxes are usually thought of as negative factors that discourage investment and growth in an area. Positive use of tax policy is severely limited

by the fact that local taxes are imposed by small jurisdictions. One result is that cities compete among themselves to obtain industry so as to provide a "tax base." To solve this problem it is suggested that taxes on industrial property, and perhaps even on commercial property, be levied by a jurisdiction larger than the city. The proceeds would then be redistributed to the localities according to population, or by some other measure of need. This would greatly facilitate planning of the location of industrial growth on an area basis.

A third device is the provision of incentives for economic growth. There are a great many types of incentives, but recently the most popular has been the industrial park. This has been used to good effect by Stanford University in the industrial development of its lands. However, this program has not been integrated into an economic plan for the entire county. The interests of the University and the industrial clients seem to have been more important in this development than areawide economic planning.

Another form of economic assistance is the provision of social overhead, particularly transportation facilities. Decisions on highway construction and other means of transportation, such as rapid transit, may influence growth in a desired direction. So far, most highway planners are more concerned with the passive policy of providing roads to meet existing and expected needs than with the use of highway construction to influence economic growth. Again, as with the other devices, it is necessary to have regional planning in order to coordinate transportation policy.

The second type of problem for policy makers is the need for adjustment to economic change that has already taken place. It might be called *post facto* planning. Many of the related problems are familiar ones to central cities: the renewal of capital in blighted areas, finding new uses for land and resources of the city, and revitalization of downtown areas.

Automation poses other important problems in the economy of this and other metropolitan areas. Automation's effects are already being felt, and may become quite massive within a few years. There are occasional closings of industrial plants and curtailment of employment. Increased difficulty is being encountered in placing unemployed in new jobs because of the great disparity in skills required for the old and new jobs. Automation is expected to replace workers in additional fields such as office operations, the services, trade, and even middle management. On one hand, job opportunities will be affected, with consequent employment difficulties. On the other hand, the amount of leisure may

rise rapidly and place further demands upon public recreational facilities. Some of the increased leisure may be in the form of shorter workweeks, but there may also be a good deal of forced leisure—that is, persons will become unemployed, underemployed, or leave the labor market. We can anticipate earlier retirement, more youths staying in school, or remaining unemployed after leaving school, and more housewives unable to obtain work. If automation proceeds very far in the next decade, as appears possible, local governments can expect increased demands on its facilities for recreation, parks, playgrounds, libraries, schools, adult education programs, and programs dealing with juvenile and adult delinquency.

Thus, economic changes expected in the Bay Area will raise increasingly serious problems for policy makers in anticipating growth and demands for new facilities, on one hand, and in readjusting to changed demands on old facilities and programs, on the other.

# Comment:

By Donald L. Foley

Department of City and Regional Planning

Orville Poland's monograph provides an informed profile of the Bay Area's economy, with emphasis on recent trends, current characteristics, and likely future directions of change, together with suggested points at which public policy might advantageously be brought to bear. With his discerning, essentially descriptive account I generally concur. He has offered a valuable contribution.

He has, however, perhaps stuck a bit doggedly with Bay Area statistics—or, more precisely, with statistics for the six-county San Francisco–Oakland standard metropolitan statistical area (SMSA) and for the single-county San Jose SMSA. His comparison of the two contiguous SMSAs is helpful, but he does not provide much sense of the Bay Area's place within the *regional* economy of California or the Far West and, particularly, of the Bay Area's complementary relationship to and division of function with its great metropolitan rival, the Los Angeles Area. The word "Los Angeles" appears only once.

California's spectacular economic growth since the war has been strongly stimulated by the vigorous expansion of durable-goods manufacturing—mainly related to national defense and space expenditures by the federal government—and employment in this sector more than doubled from 1950–60. During and following the war, California became the nation's most significant locale for aircraft production and for the manufacture of several associated product groups, particularly missiles, and communications and electronic equipment. In this, the Los Angeles–Long Beach SMSA was by far the great gainer, absorbing 363,000 additional manufacturing workers, an increase amounting to nearly two thirds of the state's total manufacturing employment gain for 1950–60. In sharp contrast, the seven-county Bay Area utilized by Poland, with about a quarter of the state's population, was substantially by-passed, gaining only 81,000 in manufacturing employment, or 15 percent of the state's increase. And of the Bay Area increase in manufacturing employment, 47,000 were in the San Jose SMSA alone, leaving the six-county San Francisco–Oakland SMSA with an increase of only 34,000, less than one tenth of her giant south-state rival SMSA. A heavy preponderance of selected manufacturing industries persists in Los Angeles. (See table below.) As guided missiles and electronics have risen to greater importance, however, their manufacture has been less monop-

olized by the Los Angeles area, and the Santa Clara County complex south of Palo Alto has emerged as distinctly important, as these 1961 figures show:

DISTRIBUTION OF CALIFORNIA EMPLOYMENT

| | Statewide total | Percent | | | |
|---|---|---|---|---|---|
| | | Seven-county Bay Area | Los Angeles-Long Beach SMSA | Rest of state | Total |
| Aircraft and parts..... | 188,600 | 1.3 | 67.3 | 31.4 | 100.0 |
| Communications equipment..... | 93,832 | 3.4 | 90.9 | 5.7 | 100.0 |
| Electronic components. | 39,329 | 40.2 | 53.6 | 6.2 | 100.0 |

This shift in distribution has also embraced Sacramento, making for an extended Bay Area prominence in these industries. It would be revealing to develop further comparisons of this order, so that the growth and make-up of the Bay Area and the Los Angeles economy could be directly compared.

In a middle part, Poland describes with Census statistics the percentage distributions in various economic activities as between San Francisco (in some cases, San Francisco and Oakland) and the rest of the SMSA. These are helpful, faithful summaries, showing trends from 1948–58 and describing the degree of centralization as of 1958. Treating each major industrial sector singly, however, does not provide a meaningful view of the economic character and balance of the central cities as units, or of major geographic sections as units. How, for example, does one characterize the economies for San Mateo County or for Alameda and Contra Costa counties (perhaps excluding Oakland, since it is treated as a central city)? Nor does Poland deal with the tremendously important phenomenon of commuting, together with the differentials between the distributions of work places and residences.

And what of the economic and fiscal health of various major political units within the Bay Area? What have been the implications of the shifts in industrial location, of differential population growth, and of the emerging transportation network? What economic problems face San Francisco, Oakland, the rest of the East Bay, and other sections?

In his final part, Poland discusses future possibilities and the prospects for public guidance of developments within the Bay Area. To his comments I would merely add some brief final points.

It may be helpful to recognize that in the complex process of change

some institutional sectors of our social economy are more subject to capricious change than others. It is essential to understand present momentum, for this provides a suggestive basis for extrapolating short-run future trends. Perhaps in those phases of life in which traditional patterns are relatively more important—the realms of religion, family life, political organization, formal education, etc.—it is realistic to assume a degree of stability that makes extrapolation reasonably reliable. But is this also possible with respect to economic development in California and its leading metropolitan areas?

My reaction is that in this realm the forecasting of economic trends for an additional twenty years must be recognized as a very precarious business. Who can reliably anticipate the changing character of military demands (on which California is so inordinately dependent), the vicissitudes of "cutting-edge" developments in research and technology (in which this state has taken so remarkable a lead), the seriousness of potential unemployment with the unanticipatable vagaries of its timing and sectional impact, and the spatial patterns resulting from heavy yet politically controlled public investment and aggressive yet largely uncoordinated private development? One need only consider the highly significant shifts in the relative functional roles and the internal metropolitan patterns that the 1940–60 period have already brought to realize how difficult it would have been to forecast these accurately.

For certain purposes aggregative extrapolations are helpful. But they must be treated as illustrative only—as what *might* happen if past trends, modified by stated assumptions, were to continue. Trends are inevitably resultants of the dynamic interaction of many forces operating in a mixed economy under highly pluralistic circumstances. We are in great need of modes of analysis that break down the aggregate and get at the likely contributions and interaction patterns of various components. Among other things it would be enlightening to identify the kinds of capital development under way, with an eye to discussing the prospects for future activity levels. William L. C. Wheaton, for example, has assembled an inventory for the Philadelphia metropolitan area identifying the relative volumes of capital development classified by land-use category—residential, manufacturing, retail business, etc.—by dollar value of project, and by type of developer, together with a brilliant discussion of the relative importance of governmental and private expenditure. We currently lack sufficient understanding of the total development process to be able to design fully effective governmental guidance.

Insofar as uncertainty is so dominant a characteristic of California's future, it would seem important that metropolitan planning, if and as it emerges as a functioning reality, be directed toward a strategic capacity to deal with change that cannot be anticipated. Single projections may misleadingly suggest single plans. While a single long-range plan for the Bay Area might have great merit—technically, for designing a coherent spatial pattern and for the planning of essential basic utilities, transportation, etc., and politically, in providing a leadership which at best could help to make the plan self-fulfilling—the single plan will likely fail to get at the dynamics of development. There is an extremely important place for the full exploration of the most likely "key developments" and the kinds of cumulative impacts they could trigger. From this we could work toward public leverage devices for ensuring the effective guidance of these key developments in the interest of identified social and economic goals. Considering that most of our future growth will be in metropolitan areas, it behooves us to tap our best experience in physical planning (to date, essentially at the local level) and economic policy formulation (to date, primarily at the national level) in synthesizing an essential new kind of metropolitan planning.

# Comment:

By Paul F. Wendt and Ernesto Cabrera R.

Center for Research in Real Estate and Urban Economics

Roughly three fourths of Orville Poland's paper is dedicated to a careful description of the San Francisco Bay Area economy. Poland's approach, in this part of the paper, is to provide us with historical trends and present description of the structure of a few basic economic variables. A statistical comparison of the San Jose metropolitan area with the San Francisco–Oakland metropolitan area is also made. Taking into account the resources and time at his disposal, and the limited objective stated, namely, to describe the economic trends in the San Francisco Bay Area, Poland should be complimented on having made a useful contribution to knowledge about the structure of the San Francisco Bay Area economy.

The latter part of the paper relies extensively on the Stanford Research Institute study, *The California Economy, 1947–1980,* and the U.S. Department of Commerce projection, *The Future Development of the San Francisco Bay Area, 1960–2020.* Using these studies as background, the author attempts to project future growth patterns of the different geographical sections of the San Francisco Bay Area, the distinct problems to be created as a result, and some possible methods of solution. These involve, of course, the very difficult problem of forecasting, and the relationships of forecasting to economic policy and to policy-implementing instruments. Here we feel Poland is treading on weaker ground. As we shall see below, descriptive data, while useful as a departure for further study of the San Francisco Bay Area, are adaptable to only the crudest type of forecasting. In adopting the extrapolations made by SRI and the U.S. Department of Commerce, Poland accepts their implicit and explicit assumptions, and hence their limitations.

Description, *per se,* poses two important disadvantages to the regional analyst. First, description alone can prove dangerous to the researcher, for it may lead him to assemble data without regard to any analytical framework. Second, and more important, the descriptive method alone is too static an approach to serve as a guide for either forecasting or policy formulation. The most that can be expected of such an approach, in this regard, is to provide us with a base from which to make simple extrapolations into the future. This limitation is highlighted in Poland's comment on page 26, "All this indicates that the Bay Area can expect

more of the same." Extrapolation has obvious forecasting shortcomings, and acceptable metro-economic forecasting requires a theoretical framework.[20]

Indeed, the main objective of metropolitan economic analysis is to provide a link between a general description of a region, a forecast of its future, and the eventual formulation of economic policy for that community.

## The Role of Economic Models in Policy Formulation

Economic analysis is invariably carried out with the aid of an economic model; it provides a framework for analysis. The more formal the analysis, the more rigorous the model becomes, of necessity. All models are, however, abstract representations of reality. If they were reproductions of the real world, they would be so complex that they would be of no practical use to us.

The economic model's purpose is to help the analyst, or policy-maker, perceive the effects upon the economy of an extraneous injection (due to policy or to natural causes) into the system. Thus, the usefulness of an economic model can be judged by its predictive value. Economic models, however, can only assist the personal judgment involved in decision making, they cannot supplant it.[21]

Models for analyzing the metropolitan economy have ranged from simple extrapolations of a few main economic variables, of the sort that could be developed from Poland's study of the San Francisco Bay Area, to economic base models similar to those cited by Poland,[22] and, more recently, to sophisticated interaction models.[23] Space does not allow us to go into the details of an interaction model here. However, a few very

[20] Britton Harris, "An Accounts Framework for Intrametropolitan Models," (paper presented at Conference on Regional Accounts in Miami, Florida, November 29–December 1, 1962), p. 1, 2. "A formal statement of theory is identical, in my opinion, with a model. At the point of model-building, however, it is frequently necessary to abandon portions of a theory in the interests of feasibility. That is to say, that a model may be an application of an incomplete theory, even when the model-builder 'knows better.' I specifically exclude from consideration any model which relies on the prediction of trends, since its assumptions must by definition preclude the possibility of conditional prediction under radically new policies or conditions." See also, Paul F. Wendt, "Forecasting Metropolitan Growth," *California Management Review* 26–34, Fall 1961.

[21] H. Tyszynski, "Economic Theory as a Guide to Policy: Some Suggestions for Reappraisal," *Economic Journal,* June 1955, p. 198: "The only proper function of economic theory in matters of policy is to act as an aid—one may hope as a major aid, but never as a unique basis—in finding solutions to specific problems."

[22] In economic base models the assumption is made that the export sector is the sector that primarily determines the level of income and economic welfare, very much as in Keynesian doctrine, for the nation as a whole, the investment sector is the

general remarks and an inside view of research currently in progress along these lines may be in order.

Partly in recognition of the need for improved metropolitan forecasting techniques, an attempt is being made by the Real Estate Research Program, University of California, to develop a prototype metropolitan economic model for the San Francisco Bay Area.[24] The system under development will, among other things, treat the household sectors and part of government activity and capital formation activity as endogenous variables. The model will be designed, in part, for use in forecasting the effects of changes in extraneous variables, as well as of changes in the individual coefficients, or parameters, of the dependent variables. Furthermore, it is expected that the model will be useful for application to other metropolitan areas as well.

## Public Policy Recommendations

The facts of life, however, are that models such as these are not now in existence and Poland finds it necessary to recommend public policies based upon admittedly imperfect forecasting techniques. The author sees a dual role for local governments in the Bay Area: "... first, that of the economic development of the region as a whole, and second, the allocation of this development geographically within the region." (p. 28) Based upon the Department of Commerce projections, he hazards the judgment that the southern part of the Bay Area will face problems of growth while the core will face problems of readjustment with a stable economy. Fortunately, his recommendations for public policy action do not rest upon the accuracy of these growth projections.

In the final section of his paper, Poland concentrates his attention on public "programs to divert economic activity into socially desirable channels before the growth takes place." In the last analysis, public

dynamic one. On the other hand, the domestic sector is assumed to be the passive sector, being dependent on the level of the export sector.

For a brief criticism of the economic base model, see Roland Artle, "On Some Methods and Problems in the Study of Metropolitan Economics" (paper presented at the meeting of the Regional Science Association at The Hague, Holland, September 4–7, 1961).

[23] Interaction (interindustry, input-output) models have been developed to take into account, empirically, the interdependence of economic activity. They are, roughly speaking, the empirical counterpart of Walras's theoretical general equilibrium model. See Leon Walras, *Elements of Pure Economics* (W. Jaffe, tr.), Homewood, Illinois: Richard D. Irwin, 1954. See also, Hollis B. Chenery and Paul G. Clark, *Interindustry Economics,* New York: John Wiley & Sons, 1959.

[24] The planning and conceptual phase of the project, under the leadership of the senior author and Professor Roland Artle, has been under way since the spring of 1962. The second phase will consist of detailed planning, assembly of data and testing of the model.

policy must be directed toward broad economic and social objectives and must be implemented by feasible measures. Three specific objectives for attaining socially desirable goals at the metropolitan level suggest themselves as a background for the consideration of the role of public policy.

1. An increase in the standard of living made possible by an increase in output, brought about through efficient allocation of existing and new resources.
2. An optimum distribution of income among the people and between the different sub-regions.
3. An optimum land use and construction design from aesthetic and functional points of view.

Poland recommends four public policy devices (p. 29–30). Each of these devices touch upon one or more of the specific objectives outlined above. What the author has failed to point out, however, is that the full attainment of one of these objectives may preclude the attainment of another. Thus, comprehensive metropolitan planning is (or should be) aimed at reaching a reasonable compromise between these three objectives, the implementation of which calls for a host of policy measures including, perhaps, those proposed by Poland.

The first measure proposed by the author, "land use planning through the familiar techniques of zoning and master plans," is most generally viewed as a physical planning measure, as differentiated from economic planning. Of the four measures proposed, the first is perhaps the most effective and the least costly to implement. However, we must not overemphasize the role played by physical planning. Irrespective of this sort of planning, there are purely economic reasons dictated by the opposing forces of gains from concentration against diminishing returns from land use which, together with topographical features, greatly influence economic activity within the metropolitan region. The problem in the use of this "device" is that, although we can justify some public interference with private land market decisions, we have no criteria for knowing how much, when, or where.

The second of the four policy "devices" which Poland recommends, the dual use of the "taxing power" as an incentive mechanism for the allocation of resources and as a means of redistributing incomes within the metropolitan area, touches upon our specific objectives (1) and (2).

The most critical problem here is that we do not know the most efficient allocation of resources we wish to achieve. We have the device but we don't know how to use it. Poland appears to be making a case

for the fact that competition among cities, to obtain industries, leads to an inefficient allocation of industrial growth on an areawide basis. One would think that this free play of the market might, in the absence of better criteria, be a perfectly sound way of achieving efficiency. Be this as it may, it is questionable how great a role local taxes play on commercial and industrial location decisions. Local taxes usually represent only a small percentage of total taxes paid. The further proposition of the author, "the redistribution of local tax revenues on the basis of population or some other measure of need," is one of the most frequently suggested, yet at the same time most controversial and difficult to implement. Who is to say what "need" is and how it is to be measured?

For purposes of discussion, Poland's third and fourth policy measures can be conveniently grouped together under a broader concept of "social overhead." They both have a bearing on our first specific objective stated above. Admittedly, a minimum of social overhead capital is necessary for economic development and may serve as a useful incentive for guiding the location of economic growth. However, to create social overhead facilities ahead of demand (unlike zoning measures, for example) is only a permissive method of stimulating economic development and of inducing its allocation to the most desired locations within the metropolitan region. Furthermore, the provision of excess capacity in social overhead is a very expensive inducement measure. When due consideration is taken of the relative weakness of local government finances, this measure may place more of a burden on governments of local communities than they can bear.

The underlying plea of the author in his concluding sections is for a greater role for the public sector in guiding metropolitan growth. Assuming that the public sector can be provided with adequate forecasting tools, suitable criteria for metropolitan efficiency, adequate financial resources, and a rational intergovernmental decision structure, we can all join his plea.

# Closing Comment:

By Orville F. Poland
Institute of Governmental Studies

The commentators on this paper are concerned over the inadequacy of economic models, where they exist, for providing a rigorous framework to project future growth. The author is well aware of these shortcomings, and looks forward to the availability of the metropolitan economic model now under development in the Center for Research in Real Estate and Urban Economics. This present paper has not been presented as a basis for economic planning in the Bay Area. Such planning requires additional research, using the best methodological tools which may be at hand. A start in this direction can be expected in the proposed transportation study, which will provide the bases for coherent transportation policy in the Bay Area.

Donald Foley has commented that Los Angeles has been mentioned but once in the paper. Touché. The relationship of the Bay Area to its hinterland in Northern California and to the rest of the state has not been examined with any thoroughness here. It is a worth-while subject of study. Perhaps even more significant is the relationship between the Bay Area and the United States as a whole. The economic future of the entire nation will be a dominant factor in the future of the Bay Area.

Paul Wendt and his colleague Ernesto Cabrera seem to have more faith than I do in the ability of the free market to insure an optimum allocation of resources in the metropolitan area. My plea, however, is not that public authorities should directly allocate these resources. Rather it is hoped that public means will be developed, on the metropolitan area level, to influence private decisions and thus to help guide resources into socially desirable channels. Over the past seventy-five years powerful indirect means of influencing decisions have been developed on the national level. Now is the time to create and start using comparable devices in the metropolitan region.

TABLE 7

WAGE AND SALARY WORKERS IN NONAGRICULTURAL ESTABLISHMENTS, BY INDUSTRY
SAN FRANCISCO-OAKLAND STANDARD METROPOLITAN STATISTICAL AREA, 1949-1961
(Thousands)

| Sector | 1949 | 1950 | 1951 | 1952 | 1953 | 1954 | 1955 | 1956 | 1957 | 1958 | 1959 | 1960 | 1961 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| *Manfacturing* | 159.0 | 164.9 | 181.6 | 184.7 | 191.4 | 183.9 | 186.7 | 195.5 | 203.0 | 190.9 | 197.2 | 198.5 | 195.9 |
| Nondurable | 89.2 | 91.9 | 94.2 | 95.2 | 97.2 | 96.0 | 97.9 | 101.1 | 104.5 | 101.4 | 103.0 | 102.8 | 102.6 |
| Durable | 69.8 | 73.0 | 87.4 | 89.5 | 94.2 | 87.9 | 88.8 | 94.4 | 98.5 | 89.5 | 94.2 | 95.7 | 93.3 |
| *Trade* | 186.8 | 188.5 | 195.9 | 199.4 | 201.6 | 198.2 | 202.4 | 207.9 | 208.8 | 204.8 | 212.3 | 217.0 | 219.3 |
| Wholesale | 58.3 | 58.5 | 61.4 | 63.4 | 65.4 | 65.1 | 66.6 | 70.2 | 72.7 | 71.4 | 73.0 | 74.3 | 74.9 |
| Retail | 128.5 | 130.0 | 134.5 | 136.0 | 136.3 | 133.1 | 135.7 | 137.7 | 136.2 | 133.4 | 139.3 | 142.7 | 144.4 |
| *Government* | 144.7 | 149.8 | 175.7 | 180.1 | 176.3 | 171.6 | 173.9 | 179.0 | 183.4 | 187.5 | 193.1 | 198.9 | 206.5 |
| Federal | 75.9 | 77.8 | 100.3 | 101.3 | 94.3 | 85.3 | 83.7 | 82.4 | 81.6 | 79.6 | 79.7 | 79.0 | 80.1 |
| State and local | 68.8 | 72.0 | 75.4 | 78.7 | 82.0 | 86.2 | 90.2 | 96.6 | 101.8 | 107.8 | 113.4 | 119.9 | 126.4 |
| City | 23.6 | 24.0 | 24.1 | 24.1 | 24.4 | 24.8 | 24.9 | 25.8 | 26.2 | 26.9 | 27.6 | 28.1 | 28.7 |
| County | 6.2 | 6.7 | 7.4 | 8.3 | 8.7 | 9.1 | 9.2 | 9.9 | 10.0 | 10.7 | 11.1 | 11.4 | 11.7 |
| Other state and local | 39.0 | 41.4 | 43.9 | 46.3 | 48.9 | 52.3 | 56.2 | 61.0 | 65.6 | 70.2 | 74.8 | 80.4 | 86.0 |
| *Services* | 98.0 | 97.8 | 101.7 | 105.8 | 108.2 | 108.6 | 111.6 | 116.7 | 121.7 | 128.2 | 135.1 | 141.2 | 146.4 |
| *Transportation, communications and public utilities* | 97.4 | 95.8 | 102.2 | 103.9 | 105.8 | 100.0 | 103.3 | 108.4 | 112.5 | 106.3 | 106.0 | 104.8 | 104.0 |
| *Finance, insurance and real estate* | 45.1 | 46.9 | 49.6 | 52.0 | 53.9 | 54.2 | 56.6 | 58.7 | 60.3 | 61.5 | 64.4 | 68.8 | 71.6 |
| *Construction* | 52.6 | 60.6 | 64.6 | 60.1 | 58.7 | 57.9 | 63.2 | 66.9 | 61.0 | 59.7 | 62.8 | 60.6 | 60.8 |
| *Mining* | 1.9 | 1.5 | 1.4 | 1.4 | 1.4 | 1.3 | 1.5 | 1.7 | 1.8 | 1.9 | 1.9 | 1.9 | 1.7 |
| Total | 785.4 | 805.9 | 872.7 | 887.3 | 897.2 | 875.6 | 899.1 | 934.8 | 952.6 | 940.7 | 972.8 | 991.6 | 1006.3 |

SOURCE: California Department of Industrial Relations, Division of Labor Statistics and Research.

TABLE 8

WAGE AND SALARY WORKERS IN NONAGRICULTURAL ESTABLISHMENTS, BY INDUSTRY
SAN JOSE STANDARD METROPOLITAN STATISTICAL AREA, 1949-1961
(Thousands)

| Sector | 1949 | 1950 | 1951 | 1952 | 1953 | 1954 | 1955 | 1956 | 1957 | 1958 | 1959 | 1960 | 1961 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| *Manufacturing* | 20.9 | 21.3 | 25.7 | 26.6 | 27.9 | 28.4 | 32.9 | 38.1 | 45.6 | 51.0 | 60.9 | 69.0 | 75.0 |
| Nondurable | 12.4 | 12.7 | 14.2 | 13.9 | 14.7 | 14.8 | 16.0 | 17.3 | 17.5 | 16.2 | 16.9 | 18.1 | 18.4 |
| Durable | 8.5 | 8.6 | 11.4 | 12.7 | 13.2 | 13.6 | 17.0 | 20.9 | 28.1 | 34.8 | 44.0 | 50.9 | 56.6 |
| *Trade* | 16.5 | 17.5 | 18.7 | 19.7 | 20.9 | 20.9 | 22.9 | 26.0 | 28.8 | 29.0 | 31.9 | 34.5 | 36.1 |
| Wholesale | 2.5 | 2.7 | 3.1 | 3.3 | 3.5 | 3.5 | 3.7 | 4.3 | 4.5 | 4.9 | 5.0 | 5.7 | 5.8 |
| Retail | 14.0 | 14.8 | 15.6 | 16.5 | 17.4 | 17.4 | 19.2 | 21.7 | 24.3 | 24.2 | 26.8 | 28.9 | 30.3 |
| *Government* | 11.8 | 11.7 | 12.2 | 12.9 | 13.4 | 14.5 | 16.1 | 17.9 | 19.2 | 21.6 | 23.6 | 26.8 | 30.1 |
| Federal | 4.6 | 3.8 | 3.9 | 3.9 | 3.8 | 3.7 | 3.6 | 3.7 | 3.7 | 3.8 | 4.2 | 5.2 | 6.2 |
| State and local | 7.2 | 7.9 | 8.3 | 9.0 | 9.6 | 10.8 | 12.4 | 14.2 | 15.5 | 17.8 | 19.4 | 21.6 | 23.9 |
| City | 1.5 | 1.6 | 1.6 | 1.6 | 1.7 | 1.8 | 1.9 | 2.2 | 2.4 | 2.8 | 3.1 | 3.5 | 3.9 |
| County | 1.1 | 1.3 | 1.3 | 1.5 | 1.6 | 1.7 | 1.8 | 2.0 | 2.4 | 2.7 | 2.9 | 3.0 | 3.3 |
| Other state and local | 4.7 | 5.0 | 5.4 | 5.9 | 6.4 | 7.3 | 8.6 | 10.0 | 10.7 | 12.3 | 13.5 | 15.1 | 16.7 |
| *Services* | 11.5 | 11.5 | 12.1 | 12.5 | 13.3 | 14.1 | 15.6 | 17.4 | 19.1 | 22.1 | 26.7 | 30.5 | 34.3 |
| *Transportation, communication and public utilities* | 5.7 | 5.8 | 6.4 | 6.4 | 6.6 | 6.7 | 7.4 | 8.1 | 8.5 | 8.1 | 8.7 | 9.2 | 9.2 |
| *Finance, insurance and real estate* | 2.2 | 2.4 | 2.5 | 2.9 | 3.2 | 3.4 | 3.7 | 4.1 | 4.6 | 5.2 | 5.7 | 6.4 | 6.8 |
| *Construction* | 6.5 | 7.7 | 8.0 | 8.2 | 8.5 | 9.4 | 11.5 | 12.4 | 12.2 | 13.5 | 16.3 | 15.4 | 16.0 |
| *Mining* | .1 | .1 | .1 | .1 | .1 | .1 | .1 | .1 | .1 | .1 | .1 | .1 | .1 |
| Total | 75.2 | 78.0 | 85.7 | 89.3 | 94.0 | 97.5 | 110.3 | 124.1 | 138.1 | 150.6 | 173.9 | 191.8 | 207.8 |

SOURCE: California Department of Industrial Relations, Division of Labor Statistics and Research.

TABLE 9

WAGE AND SALARY WORKERS IN NONAGRICULTURAL ESTABLISHMENTS, BY INDUSTRY
SAN FRANCISCO-OAKLAND AND SAN JOSE STANDARD METROPOLITAN STATISTICAL AREAS, COMBINED, 1949-1961
(Thousands)

| Sector | 1949 | 1950 | 1951 | 1952 | 1953 | 1954 | 1955 | 1956 | 1957 | 1958 | 1959 | 1960 | 1961 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| *Manufacturing* | 179.9 | 186.2 | 207.3 | 211.3 | 219.3 | 212.3 | 219.6 | 233.6 | 248.6 | 241.9 | 258.1 | 267.5 | 270.9 |
| Nondurable | 101.6 | 104.6 | 108.4 | 109.1 | 111.9 | 110.8 | 113.9 | 118.4 | 122.0 | 117.6 | 119.9 | 120.9 | 121.0 |
| Durable | 78.3 | 81.6 | 98.8 | 102.2 | 107.4 | 101.5 | 105.8 | 115.3 | 126.6 | 124.3 | 138.2 | 146.6 | 149.9 |
| *Trade* | 203.3 | 206.0 | 214.6 | 219.1 | 222.5 | 219.1 | 225.3 | 233.9 | 237.6 | 233.8 | 244.2 | 251.5 | 255.4 |
| Wholesale | 60.8 | 61.2 | 64.5 | 66.7 | 68.9 | 68.6 | 70.3 | 74.5 | 77.2 | 76.3 | 78.0 | 80.0 | 80.7 |
| Retail | 142.5 | 144.8 | 150.1 | 152.5 | 153.7 | 150.5 | 154.9 | 159.4 | 160.5 | 157.6 | 166.1 | 171.6 | 174.7 |
| *Government* | 156.5 | 161.5 | 187.9 | 193.0 | 189.7 | 186.1 | 190.0 | 196.9 | 202.6 | 209.1 | 216.7 | 225.7 | 236.6 |
| Federal | 80.5 | 81.6 | 104.2 | 105.2 | 98.1 | 89.0 | 87.3 | 86.1 | 85.3 | 83.4 | 83.9 | 84.2 | 86.3 |
| State and local | 76.0 | 79.9 | 83.7 | 87.7 | 91.6 | 97.0 | 102.6 | 110.8 | 117.3 | 125.6 | 132.8 | 141.5 | 150.3 |
| City | 25.1 | 25.1 | 25.7 | 25.7 | 26.1 | 26.6 | 26.8 | 28.0 | 28.6 | 29.7 | 30.7 | 31.6 | 32.6 |
| County | 7.3 | 8.0 | 8.7 | 9.8 | 10.3 | 10.8 | 11.0 | 11.9 | 12.4 | 13.4 | 14.0 | 14.4 | 15.0 |
| Other state and local | 43.7 | 46.4 | 49.3 | 52.2 | 55.3 | 59.6 | 64.8 | 71.0 | 76.3 | 82.5 | 88.3 | 95.5 | 102.7 |
| *Services* | 109.5 | 109.3 | 113.8 | 118.3 | 121.5 | 122.7 | 127.2 | 134.1 | 140.8 | 150.3 | 161.8 | 171.7 | 181.0 |
| *Transportation, communication and public utilities* | 103.1 | 101.6 | 108.6 | 110.3 | 112.4 | 106.7 | 110.7 | 116.5 | 121.0 | 114.4 | 114.7 | 114.0 | 113.2 |
| *Finance, insurance and real estate* | 47.3 | 49.3 | 52.1 | 54.8 | 57.1 | 57.6 | 60.3 | 62.8 | 64.9 | 66.7 | 70.1 | 75.2 | 78.4 |
| *Construction* | 59.1 | 68.3 | 72.6 | 68.3 | 67.2 | 67.3 | 74.7 | 79.3 | 73.2 | 73.2 | 79.1 | 76.0 | 76.8 |
| *Mining* | 2.0 | 1.6 | 1.5 | 1.5 | 1.5 | 1.4 | 1.6 | 1.8 | 1.9 | 2.0 | 2.0 | 2.0 | 1.8 |
| Total | 860.6 | 883.9 | 958.4 | 976.6 | 991.2 | 973.1 | 1009.4 | 1058.9 | 1090.7 | 1091.3 | 1146.7 | 1183.4 | 1214.1 |

SOURCE: California Department of Industrial Relations, Division of Labor Statistics and Research.

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